HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

Compiled and edited by

John H. Crothers
James P. Lorentz
Donald A. Sherman
Marilyn M. Vihman

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025 Somali

025 01 b
[p-unreleased][60]
(allo,free)
[p-ejective][60]
(free,allo)
[beta][62]
(free)
[p][63]
(free)

025 02 b-long[02]

025 03 t-aspirated[04] 30

025 04 d
[t-unreleased][60]
(allo,free)
[t-ejective][60]
(free,allo)
[eth][66]
(free)
[t][67]
(free)

025 05 d-long[02]

025 06 d-retroflex-implosive[05] 06
[t-retroflex-unreleased][60]
(allo,free)
[t-retroflex-ejective][60]
(allo,free)
[r-flap-retroflex][07] 70

025 07 d-retroflex-implosive-long

025 08 k-aspirated[04] 30

025 09 g
[k-unreleased][60]
(allo,free)
[k-ejective][60]
(allo,free)
[gamma][73]
(free)
[k][74]
(free)

025 10 g-long

025 11 q-voice[08] 09 10
[q-unreleased][11] 75
[gamma-uvular][76]
(free)
[q][77]
(free)

025 12 q-voice-long
[q-long][78]
(free)

025 13 t/s-hacek[12] 13 31

025 14 f
[f-long][79]
(free)

025 Somali

15 s[14]
[s-long][79]
(free)

16 s-hacek[14]
[s-hacek-long][79]
(free)

17 x[32]
(loan)

18 pharyngeal-voiceless[15]

19 pharyngeal-voice[16] 17 18

20 m[33]

21 n[19]
*[n-long]
[eng][80]
[n-uvular][81]

22 n-long[20] 82
(tag(+),allo)
*/n/
[n-half-voice-long][83]

23 l[21]
*[l-long]
[l-half-voice][83]

24 l-long[20] 82
(tag(+),allo)
*/l/
[l-half-voice-long][83]

25 r-flap[22] 34
[r-trill][23] 85
[r-trill-voiceless][86]

26 r-trill-long[20] 24 25
[r-trill-half-voice-long][26] 83

27 glottal stop

28 h[35]
[h-voice][87]

51 i
[i-nasalized][88]

52 i-long
[i-long-nasalized][88]

53 iota
[iota-nasalized][88]

54 iota-long
[iota-long-nasalized][88]

025 Somali

55 e
[e-nasalized][88]

56 e-long
[e-long-nasalized][88]

57 epsilon
[epsilon-nasalized][88]

58 epsilon-long
[epsilon-long-nasalized][88]

59 ash
[ash-nasalized][88]

60 ash-long
[ash-long-nasalized][88]

61 upsilon-dot
[upsilon-dot-nasalized][88]

62 upsilon-dot-long
[upsilon-dot-long-nasalized][88]

63 o-mid-dot
[o-mid-dot-nasalized][88]

64 o-mid-dot-long
[o-mid-dot-long-nasalized][88]

65 schwa
[a][89]
[schwa-nasalized][88]

66 a-long
[a-long-nasalized][88]

67 upsilon[28]
[upsilon-nasalized][88]

68 upsilon-long[29]
[upsilon-long-nasalized][88]

69 o-open
[o-open-nasalized][88]

70 o-open-long
[o-open-long-nasalized][88]

71 yod

72 w

81 high
*[mid]

82 low[42]
[mid][90] 91
*/high/

025 $a Somali $d Cushitic $e Somalia $f 2 million $g Merritt Ruhlen $g Jim Lorentz (review) $g John Crothers (editor)

025 $a Armstrong, Lilias E. $b 1964 $c The Phonetic Structure of Somali $g Ridgewood, New Jersey: Gregg Press $G Reprint of article originally appearing, with same title, in Mitteilungen des Seminars fur Orientalische Sprachen 1934 University of Berlin. $q informants: 2 $r unknown

025 $a Andrzejewski, B. W. $b 1955 $c The problem of vowel representation in the Isaaq dialect of Somali $d Bulletin of the School of Oriental and African Studies, XVII.3.567-580. $g University of London: School of Oriental and African Studies

025 $a Andrzejewski, B. W. $b 1956 $c Accentual patterns in verbal forms in the Isaaq dialect of Somali $d Bulletin of the School of Oriental and African Studies, XVIII:1.103-129. $g University of London: School of Oriental and African Studies

025 $a **ACCENT** $A Andrzejewski (1956, p.106-107) analyzes the tones and stress of Somali as forming a tonal accent system. He gives three basic types of accent: high-stressed, high-falling-stressed, and mid- (or low-) unstressed. A word has one of these accents, or, in some forms, two accented syllables with both of the stressed accents. The accent pattern of verbal forms is determined by the verbal inflections, with minor modifications depending on the phonological make-up of the verb stem. Armstrong (p.24ff) indicates that accent in nouns is determined largely by gender: masculine stems end in a low or falling tone, feminines in the high (phonetically mid word finally) tone. Plurals all end in high tone. Falling tone is found only on long syllables (with long V, or diphthong in closed syllable), and seems to be very similar to a sequence of /high/ plus /low/ syllable. Also, non-final unaccented syllables are phonetically mid, and Armstrong notes that high syllables often have a slight rise, so that interpretation of long high syllables as sequences of /low/ plus /high/ is reasonable. This would allow one to analyze Somali words as generally having a single accented (high toned) vowel mora, the location of which is determined according to the categories mentioned. Certain verbal categories have two accents (apparently due to stressed affixes), certain others have no accent (all tones low). [JHC]

025 $a **LONG CONSONANTS** $A Voiced stops may alternate with their long counterparts when they occur "initially...after a stressed syllable ending in a short vowel and pronounced usually with the high level tone." (p.23) "It often happens in Somali that certain sounds [the long voiced stops] are long when the words in which they occur are pronounced in isolation, but short in quick speech." (p.24)

025 $a **STRESS** $A "Stress and pitch are closely connected. In words of more than one syllable strong stress is given to the syllable pronounced with high level or falling pitch.... There is a fairly even distribution of speech energy over syllables pronounced with the same level pitch." (p.32-33)

025 $a **SYLLABLE** $A (C)V(:)(G)(C) $A The only example of V:G is /a-long.w/. (p.21)

025 $a **TONE** $A domain of tone: mora

025 $a **VOICED STOPS** $A The choice of free variants of the voiced stops appears to depend heavily on idiolect. [JL]

025 $a **VOWEL HARMONY** $A Andrzejewski (1955) finds an extensive and regular system of vowel harmony in Somali. The difference between his interpretation and that of Armstrong is that Andrzejewski has a distinction between front harmonic /i/ and back harmonic /iota/, which is not recognized by the latter. This establishes a system of five vowel pairs which occur both short and long: front harmonic /i, e, ash, upsilon-dot, o-mid-dot/, and back harmonic /iota, epsilon, schwa, upsilon, o-open/. Andrzejewski lists minimal pairs for all pairs of vowels, both front and back. (p.576f) Stems contain only vowels of one set. Front harmonic forms are dominant: when a back harmonic form is followed by a front harmonic form, it takes on the front vowel values. This tendency is subject to considerable variation. In addition a number of grammatically subsidiary forms assimilate the value of a preceding form. (See p.574.) [JHC]

025 02 $A /b-long, d-long/ do "not sound fully voiced, but tracings made by Haji Farah show full voicing." (p.4)

025 04 $A /t-aspirated, k-aspirated/ are "rather strongly" aspirated. (p.4, 7)

025 05 $A /d-retroflex-implosive/: "The symbol 'd-retroflex' represents in Somali a sound which is very different from ordinary [d-retroflex]. In the first place, it is not really retroflex at all, but generally post-alveolar, and in place of articulation thus resembles the 'supradental' sound of 'rd' of Swedish...and also the 'retroflex' or 'cerebral' [d] of northern Indian languages." (p.5) Seems to be "retroflex" in Archive terminology. [JL]

025 06 $A /d-retroflex-implosive/: "The occlusion is voiced initially. The sound is produced with the same pharyngal contraction and the same raising of the larynx as is necessary in the articulation of [pharyngeal-voice] and [pharyngeal-voiceless]. If this contraction is released and the larynx moved down again at the same time as the tip of the tongue is removed from the back of the teeth ridge, there is a momentary rushing in of air giving the sound an implosive quality." (p.5-6)

025 07 $A For [r-flap-retroflex] "the tip of the tongue is raised to a point just behind the teeth ridge and, without touching at this point, is immediately lowered, the under part of the tip striking the teeth ridge in its descent." (p.6)

025 08 $A /q-voice/ "is made by raising the back of the tongue to the extreme back of the soft palate. At the same time there appears to be pharyngeal modification." (p.8)

025 09 $A "The symbol 'q' suggests a voiceless sound; but Somali [q] must be classed, not with [t-aspirated] and [k-aspirated], but with [b, d, d-retroflex-implosive, g], since in the matter of voicing and lack of any aspiration it behaves in the same way as these sounds. The symbol 'G' would be more suggestive of the nature of the sound." (p.8)

025 10 $A One informant "pronounced /q-voice/ as an affricate in initial and final positions. Initially it was partially voiced [q-voice/gamma-uvular], the fricative element being weak. Finally it was voiceless: [q/x-uvular]." (p.8-9)

025 11 $A /q-unreleased] is "voiceless (or with slight voicing)." (p.8)

025 12 $A /t/s-hacek/ is "made with the tip of the tongue against the lower teeth; a closure is formed between the blade of the tongue and the back of the teeth-ridge, and the rest of the tongue is raised towards the palate." (p.9)

025 13 $A "During the closure there is little or no voice when [t/s-hacek] is initial, and very little when medial." (p.9)

025 14 $A "For /s/ and /s-hacek/ the tip of the tongue is against the lower teeth and the sounds are articulated with the blade." (p.13)

025 15 $A "Two essential elements of the articulation of /pharyngeal-voiceless/ appear to be (1) a raising of the larynx, (2) contraction of the pharyngal muscles. These conditions lead to a narrowing of the pharyngal passage and the setting up of a very special kind of friction there." (p.14)

025 16 $A /pharyngeal-voice/ "has, in a greater degree, the pharyngal contraction characteristic of /pharyngeal-voiceless/: there is...a greater raising of the larynx than for /pharyngeal-voiceless/, and greater narrowing behind the epiglottis." (p.15)

025 17 $A "The voicing is intermittent for /pharyngeal-voice/." (p.15)

025 18 $A An x-ray photograph of the throat of one of the informants during the pronunciation of /pharyngeal-voice/ has been published in LeMaitre Phonetique, January 1934.

025 19 $A "Finally in many words, generally after a long vowel, a very weak variety of [n] is used and the preceding vowel is nasalized. One has the impression that this final [n] will soon disappear and that there will be nothing but the nasalized vowel to tell of its previous existence." (p.9)

025 20 $A Long sonorants (/n-long, l-long, r-trill-long/) alternate with their short counterparts word finally upon the addition of a suffix. (p.10, 11, 13)

025 21 $A "/l/ is never very 'clear.'" (p.11)

025 22 $A /r-flap/ has "one tap." (p.12)

025 23 $A [r-trill] is pronounced "with four or five taps." (p.13)

025 24 $A /r-trill-long/ "sounds partially voiceless, but kymographic tracings show voicing throughout. The voice is probably obscured by the breathiness which accompanies the sound." (p.12)

025 25 $A /r-trill-long/ is a "very long 'r' (nine or ten taps)." (p.13)

025 26 $A "After short vowels the sound [[r-trill-half-voice-long]] is voiceless during the latter half of its length. After long vowels it gives the impression of being entirely without voice." (p.13)

025 28 $A /upsilon/ is "more retracted than the vowel of English 'put.'" (p.20)

025 29 $A "Long /upsilon/ resembles a very close back [o], except after /yod/ and /w/ when it is more [u]-like." (p.20)

025 30 $A /t-aspirated, k-aspirated/ do "not occur finally." (p.4, 7)

025 31 $A /t/s-hacek/ "does not occur finally." (p.9)

025 32 $A /x/ "occurs in Arabic words only." (p.13)

025 33 $A /m/ "does not occur finally in Somali words." (p.9)

025 34 $A /r-flap/ occurs only in medial position. (p.12)

025 35 $A "Words often 'lose' their final /h/ in the course of connected speech." (p.14)

025 42 $A [low] tone is in "general falling in quite final positions."(p.24)

025 60 $A The voiced stops /b, d, d-retroflex-implosive, g/ are realized as weak voiceless unreleased stops before voiceless obstruents, and as unreleased voiceless (or slightly voiced) stops varying with voiceless ejective stops finally. (p.4-7)

025 61 $A /b/ is "voiceless (or with slight voicing) and with no release; or [p-ejective] (i.e. [p] with glottal closure and release), finally." (p.4)

025 62 $A /b/ is "often [beta] when single between vowels, especially after a stressed syllable." (p.4)

025 63 $A /b/ is realized as [p] word initially. (p.4) ("/b/ has not much voice initially. In a number of kymograph tracings made by Haji Farah, no voice at all is recorded initially. His initial /b/ is therefore like a weak unaspirated [p]." (p.4) The other informant's voiced stops were "more voiced" word initially.)

025 66 $A /d/ is "often [eth] when single between vowels, especially after a stressed syllable." (p.5)

025 67 $A /d/ is realized as [t] word initially. (p.4) ("There is not much voice initially; often none at all." (p.4))

025 70 $A /d-retroflex-implosive/ is a "fully voiced flapped [r-flap-retroflex] when single between vowels." (p.6)

025 73 $A /g/ is "sometimes [gamma] when single between vowels, especially after a stressed syllable." (p.7)

025 74 $A /g/ is realized as [k] word initially. (p.7) ("/g/ has not much voice initially. In a number of kymograph tracings made by Haji Farah no voice at all is recorded initially." (p.7))

025 75 $A /q-voice/ is realized as [q-unreleased] "finally." (p.8)

025 76 $A /q-voice/ may be realized as [gamma-uvular] "When single between vowels, especially after a stressed syllable." (p.8)

025 77 $A /q-voice/ is realized as [q] word initially. (p.8) ("Haji Farah's sound had very little voice initially; often none at all." (p.8))

025 78 $A /q-voice-long/ may be realized as [q-long]. "This, in Haji Farah's pronunciation, was either partially voiced or voiceless." (p.8)

025 79 $A /f, s, s-hacek/ are "often pronounced long with very strong breath force." (p.13)

025 80 $A /n/ is realized as [eng] "before /g, k-aspirated/." (p.10)

025 81 $A /n/ is realized as [n-uvular] "before /q-voice/." (p.10)

025 82 $A "Finally in many words, generally after a short vowel in a stressed syllable, the /n/ [and /l/ are]...long and strong." (p.10f)

025 83 $A /n-long, l, l-long, r-trill-long/ are partially voiced word finally. (p.10, 11)

025 85 $A /r-flap/ is realized as [r-trill] word finally after short vowels. (p.12)

025 86 $A "Initially in a word /r-flap/ appears to be always strong and practically voiceless." (p.12) Word finally after long vowels: "A shorter 'r' (about three taps) practically unvoiced." (p.12)

025 87 $A /h/ is voiced in medial position. (p.14)

025 88 $A Vowels are nasalized in the environment of a nasal consonant. ("Vowels preceding and following [m] are very noticeably nasalized in the neighborhood of nasal consonants." (p.16))

025 89 $A /schwa/ is realized as [a] next to glottal or pharyngeal consonants. (p.19)

025 90 $A /high/ becomes [mid] finally. (Andrzejewski 1956, p.106)

025 91 $A /low/ tone is [mid] on non-final syllables. (Andrzejewski 1956, p.106)